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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/035,535  
Filing Date: October 26, 2001  
Appellant(s): BOEK ET AL.

**MAILED**

DEC 21 2005

**GROUP 1700**

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Kevin Able  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 30 September 2005 appealing from the  
Office action mailed 01 April 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(8) Evidence Relied Upon**

6,116,055                      ISHIKAWA                      9-2000  
KINGERY, "Introduction to Ceramics" (2nd) 1976, pages 219-226.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

Claims 1-3, 6-31 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over ISHIKAWA in view of KINGERY.

**Claim 1: A method of manufacturing an optical waveguide preform,**

See col. 5, lines 27-30 of Ishikawa

**said method comprising: exposing a soot preform to an atmosphere including a chlorine-containing gas and thereby doping the soot preform with chlorine,**

See at least the Abstract of Ishikawa. It is clear to one of ordinary skill that the preform is a soot preform, as per col. 3, lines 14-17.

**wherein the absolute pressure of the atmosphere is substantially greater than 101.3 kPa**

Ishikawa does not teach this pressure. However, col. 1, lines 60-65 of using a pressure greater than atmospheric (i.e. 101.3 kPa) but does not disclose it is "substantially greater". Kingery is directed to Fick's laws of diffusion. One of ordinary skill in the art is familiar with these principles. It is easy to see from the equations (for example equation 6.21) that the higher the concentration of solute (which is chlorine in the present invention and in Ishikawa) the more of the solute diffuses into the body.

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And from routine application of the Ideal gas law, one knows that the higher the partial pressure of species/solute in a gas, the higher the concentration of the solute atom. It would have been obvious to use a high a pressure as reasonably possible in the Ishikawa method, so as to maximize the amount of chlorine in the preform.

Alternatively, Kingery is cited to show that pressure/concentration is a result effective variable. It would have been obvious to perform routine experimentation to determine the optimal pressure of Chlorine-gas in the Ishikawa method.

**and the mole percentage of chlorine present in the atmosphere is between about 20% and 40%.**

See Ishikawa's claim 2 which discloses a range of 3-60%; table 2 of col. 7 teaches a pressure of 0.2 atm. This corresponds to a concentration of 20% when one use atmospheric gas, as is done at col. 5, line 39.

Claim 2: See Ishikawa, col. 2, lines 41-17, as well as figure 1.

Claims 6-7: as per col. 1, lines 18 which teaches 1% chlorine corresponds to a 0.11% change in the refractive index. See col. 6, lines 55-59 which suggests a chlorine content between about 0.3% and 1.2%. Also experiment 7 of TABLE 1 discloses a difference of 0.108% - thus this is greater than the amount that corresponds to 0.107% which would read on the "about 1%" limitations.

Claim 8 is clearly met.

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Claim 9 See Ishikawa col. 6, line 38.

Claim 10: it would have been obvious to perform routine experimentation to determine the optimal temperature. As per the top of page 221 of Kingery: diffusion is determined by atomic mobility which is determined by the temperature. Thus temperature is a known result effective variable.

Claims 11-12: as indicated above, it would have been obvious to perform routine experimentation to determine the optimal pressure – depending upon the desired glass chemistry.

Claims 13-14: it would have been obvious to determine the optimal duration. It is well understood that time is an important variable, see equation 6.13 of Kingery for example:

Claim 15: col. 5, line 61 of Ishikawa.

Claim 16: calls for improving viscosity matching verses a hypothetical “like preform” that is not chlorine doped. There is no indication as to how it must be “like” - it is deemed that the Ishikawa preform is like any other cylindrical preform that has the same dimensions- they would be “like” each other because they are of the same size. Since the claim indicates that the non-existent preform does not have chlorine, it is presumed that it can have anything else. It is deemed that one can hypothetically construct a preform with a worse match, merely by having a lot of other dopants that make the viscosities worse.

Alternatively: as indicated by Appellant, the chlorine inherently changes the viscosity of the glass. Since Ishikawa teaches preforms that are like the others, but with

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different chlorine levels, they preforms would have different matches. For example, from figure 2 C) of Ishikawa: 5, 6 and 7 are all "like" each other. Either 7 has a better match than 5, or 5 has a better match than 7. They cannot have equal matches, because their chlorine doping is different.

Claims 17-18: see Appellant's specification at page 8, lines 16-17, and figure 3 which indicate that a "layer" can be rod-like. Example 5, (starting at the bottom of col. 6) has the inner layer (10) and the outer layer(20).

Claims 19-31 are met for the reasons given above. These claims have the same limitations that were addressed above.

Claims 36-37 require even higher pressures. As above, it would have been obvious to have as high a pressure as desired – depending upon the amount of chlorine one wants doped. Alternatively, it would have been obvious to perform routine experimentation to determine the optimal value for the known result-effective variable.

### **(10) Response to Argument**

It is argued that the rejection is amounts to an "obvious-to-try" type rejection, because Ishikawa only teaches that using a pressure greater than one atmosphere presents a problem.

From MPEP 2145:

A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness; however, "the nature of the teaching is highly relevant and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some

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other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) (Claims were directed to an epoxy resin based printed circuit material. A prior art reference disclosed a polyester-imide resin based printed circuit material, and taught that although epoxy resin based materials have acceptable stability and some degree of flexibility, they are inferior to polyester-imide resin based materials. The court held the claims would have been obvious over the prior art because the reference taught epoxy resin based material was useful for applicant's purpose, applicant did not distinguish the claimed epoxy from the prior art epoxy, and applicant asserted no discovery beyond what was known to the art.)

The facts in In re Gurley are similar to those in the present appeal. Ishikawa teaches that one can use a pressure higher than atmospheric. The fact that Ishikawa describes it as being somewhat inferior, is largely irrelevant because it is clear it would be useful for the same purpose. Applicant has not asserted any discovery beyond what was known in the art.

Examiner could find nothing that is suggestive that Ishikawa teaches to "try" a higher pressure merely because it might work. As indicated above, "the nature of the teaching is highly relevant and must be weighted in substance". Examiner could not find anything in the Ishikawa teaching at col. 1, lines 61-65 "If the partial pressure of SiCl<sub>4</sub>... is more than 1 atm, a pressurized furnace must be used, entailing a problem of complex furnace structure", which even hints at it being an "obvious to try" teaching. There is nothing that indicates that one could try it with the hopes of it working, or anything that in anyway suggests that it would not work 100% of the time, any complexity issues notwithstanding.

It is well understood that prior art disclosures may point out difficulties/problems in performing any process. But there is no basis to conclude that difficulties constitute any chance of necessary failure. The plain meaning of the Ishikawa teaching is exactly



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what it says. There is nothing vague or confusing that might imply merely trying.

Appellant has not pointed out how one could conclude that Ishikawa teaches “trying”.

If one uses an elevated pressure, one will have to endure the hardships of using a complex furnace structure. There is NOTHING which suggests that that pressure would effect the doping aspect – only the means for implementing the process.

To look at another way: The problem is only pertinent to the artisan who does not already have the complex furnace structure. If one already possessed the complex furnace structure, there would be NO problem.

It is further argued that “Appellants assert that Ishikawa teaches nothing beyond the fact that use of a partial pressure greater than one atmosphere presents a problem.” Examiner agrees; this is sufficient to show that it is known to use an elevated pressure. Moreover, Appellant’s assertion clearly shows that there is NO obvious-to-try teaching/suggestion in Ishikawa. Any notion that Ishikawa teaches to “try” comes from Appellant going “beyond” what Ishikawa teaches; the notion of “trying” does not originate in Ishikawa nor in Kingery nor from the Office.

In other words: Appellant has failed to make a prima facie showing of obvious-to-try. As Appellant points out, a showing of obviousness requires a suggestion or motivation. Appellant has failed to provide any evidence (or even an allegation) which indicitive of a suggestion or motivation to merely try. It appears that Appellant is using impermissible hindsight by using the Office’s proper showing of obviousness as a template to create a different but improper modification (i.e. an obvious-to-try

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modification). In contradistinction to the Office's proper modification (which only has "doing" but no "trying").

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Thus it does not matter that Kingery does not disclose exposing a fiber preform to an elevated pressure.

It is further argued that since Ishikawa chose a path that does not go above one atmosphere, that Kingery is not sufficient motivation for Ishikawa to explore high pressure doping. This is not convincing, because that would make no rejection proper under 35 USC 103. For example, one could always argue that since the first reference does not explore the path of the secondary reference, the secondary reference does not have sufficient motivation to modify the primary reference in accordance with the teachings of the secondary. It is also not convincing because it is clear that Ishikawa's motivation was one based on furnace complexity – not the doping. Examiner presumes that creating a pressurized furnace is a problem, but is fully enabled (in both Ishikawa and Appellant's disclosure) Nevertheless, Ishikawa acknowledges that one can use a higher pressure, and Kingery reasonably shows that one of ordinary skill would know that higher pressure gets a better result.

As to the "suggestion to combine" argument. It is again noted that Kingery is merely cited as showing what is known in the prior art. It is common sense that the more of an active ingredient in most processes generally create a more intense result. For example, more soap in the dishwasher, more acid in an etchant bath, more oxygen/fuel in a fire, etc. Applicant's invention of adding additional chlorine into a reaction chamber (so that it is over-pressurized) is merely the specific application of the ancient, obvious, common-sense practice of adding more of an ingredient to get a more intense result. (Applicant has not demonstrated anything new and unexpected by increasing the pressure.) Since any assertion by Examiner is immaterial, evidence is needed. Kingery is the requisite evidence. Kingery is utilized to show that it is known in the prior art in the specific case of diffusion of species into solid body. Thus the arguments regarding a "suggestion to combine" are irrelevant – the rejection is not based on combining the references or their teaching.

It is argued that Ishikawa's teaching indicates that Ishikawa's disclosure is non-enabled. It appears Appellant concluded that Ishikawa's teaching of a complexity problem constitutes an enablement issue. MPEP 2164.01 sets forth criteria for determining whether something is enabled or not; mere acknowledgement of a problem does not comport to the criteria. Various factors need to be considered, Applicant has only pointed to one factor and has not addressed the other factors. Appellant has failed to provide a prima facie showing of non-enablement. Appellant is invited to show that one could not make or use Ishikawa's invention with a high pressure (as set forth in

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MPEP 2164.01). Such a showing could be used to demonstrate that Appellant's invention is also not enabled.

From MPEP 2145:

**VII. ARGUING ECONOMIC INFEASIBILITY**

The fact that a combination would not be made by businessmen for economic reasons does not mean that a person of ordinary skill in the art would not make the combination because of some technological incompatibility. In re Farrenkopf, 713 F.2d 714, 219 USPQ 1 (Fed. Cir. 1983) (Prior art reference taught that addition of inhibitors to radioimmunoassay is the most convenient, but costliest solution to stability problem. The court held that the additional expense associated with the addition of inhibitors would not discourage one of ordinary skill in the art from seeking the convenience expected therefrom.).

Examiner presumes that the a "complex furnace structure" is just an additional expense which would not discourage one of ordinary skill

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

John Hoffmann

12-16-05

Conferees:

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Patrick Ryan

  
Steve Griffin